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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,663	08/27/2001	Kenji Kaneko	P21381	2500

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EXAMINER

SOHN, SEUNG C

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,663

Applicant(s)

KANEKO ET AL.

Examiner

Seung C. Sohn

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 1-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (Patent No. US 5,877,892).***

Referring to claim 1, Nakamura et al. shows in Fig. 1 the following elements of Applicant's claim:

- a) a sighting telescope optical system through which a sighting object can be sighted (Col. 7, lines 55-58);
- b) a distance measuring system which measures a distance to said sighting object, and outputs first data (Col. 14, lines 45-46);
- c) a phase detection autofocus system (20, i.e., focus detector) which detects a focus state of an image of said sighting object on a reference focal plane (14A), and outputs second data (Col. 6, lines 51-62); and
- d) an AF driver (30, i.e., lens driver) which moves a focusing lens (12) of said sighting telescope optical system to bring said sighting object into focus in accordance with one of said first data and said second data (Col. 7, lines 5-12).

Referring to claims 2 and 10, Nakamura et al. discloses a start button, wherein said distance measuring system and said AF driver operate consecutively upon a single-push operation of said start button.

Referring to claims 3 and 11, Nakamura et al. discloses a controller which provides a consecutive autofocus mode in which said sighting object is brought into focus automatically consecutively via said AF driver, and a consecutive distance measurement mode in which said distance to said sighting object is consecutively measured via said distance measuring system; wherein said consecutive autofocus mode starts at the same time said consecutive distance measurement mode is started.

Referring to claims 4 and 12, Nakamura et al. discloses a controller which drives said AF driver to move said focusing lens to a predetermined position thereof so that an object at a predetermined distance is in focus when said sighting object is unable to be brought into focus in the case of a measurement mode in which a target is set at an arbitrary point.

Referring to claims 5 and 13, Nakamura et al. discloses that said surveying instrument is a total station (Col. 14, lines 26-30).

Referring to claims 6 and 14, Nakamura et al. discloses that said distance measuring system comprises a distance meter having a light-emitting element and a light-receiving element (Col. 14, lines 45-48).

Referring to claims 7 and 15, Nakamura et al. discloses that said phase detection autofocus system comprises a pair of line sensors (Col. 6, lines 61-62).

Referring to claim 8, Nakamura et al. shows in Fig. 1 the following elements of Applicant's claim:

- a) a sighting telescope optical system through which a sighting object can be sighted (Col. 7, lines 55-58);
- b) a distance measuring system which measures a distance to said sighting object (Col. 14, lines 45-46); and
- c) a phase detection autofocus system (20, i.e., focus detector) which detects a focus state of an image of said sighting object on a reference focal plane (14A) (Col. 6, lines 51-62); and
- d) an AF driver (30, i.e., lens driver) which moves a focusing lens (12) of said sighting telescope optical system to bring said sighting object into focus in accordance with an output of said phase detection autofocus system (Col. 7, lines 5-12).

Referring to claim 9, Nakamura et al. discloses that said AF driver (30) moves said focusing lens (12) to bring said sighting object into focus in accordance with an output of said phase detection autofocus system (20) without the use of a reflective device at a point of said sighting object (Col. 6, lines 48-50).

Referring to claim 16, Nakamura et al. shows in Fig. 1 the following elements of Applicant's claim:

- a) a sighting telescope through which a sighting object can be sighted (Col. 7, lines 55-58); and

b) an AF drive unit (30) which is provided separately from said sighting telescope, wherein said AF drive unit can be mounted to and dismounted from a body of said surveying instrument (10, i.e., auto-level) (Col. ;

said AF drive unit including:

ba) a sensor (21) which receives part of a light bundle which is passed through an objective lens of said sighting telescope;

bb) a drive mechanism (30) which drives a focusing lens group (12) of said sighting telescope along an optical axis thereof;

bc) a controller (25, i.e., control circuit) which inputs sensor data output from said sensor (21) to control the operation of said drive mechanism (30) in accordance with said input sensor data so as to focus said sighting telescope on said sighting object; and

bd) a driving force transmitting device (32) which transmits a driving force generated by said drive mechanism to said focusing lens group (12) in a state where said AF drive unit is mounted to said body of said surveying instrument.

Referring to claim 17, Nakamura et al. discloses a light guide, provided between said AF drive unit and said body of said surveying instrument, for guiding said part of said light bundle which is passed through said objective lens to said sensor (Col. 2, lines 5-16).

Referring to claim 18, Nakamura et al. discloses said light guide comprises a first aperture formed on said body of said surveying instrument and a second aperture formed on a body of said AF drive unit, said first aperture and said second aperture

being aligned so that said part of said light bundle can travel from inside of said body of said surveying instrument to said sensor via said first and second apertures.

Referring to claim 19, Nakamura et al. discloses said AF drive unit comprises a focus control portion which is manually operated to control said operation of said drive mechanism.

Referring to claim 20, Nakamura et al. discloses said focus control portion comprises an AF start button, said controller performing an autofocus operation upon said AF start button being depressed.

Referring to claim 21, Nakamura et al. discloses said focus control portion is positioned in the vicinity of an eyepiece of said sighting telescope.

Referring to claim 22, Nakamura et al. discloses at least one of said drive mechanism and said AF controller is supplied with power from a battery accommodated in said AF drive unit.

Referring to claim 23, Nakamura et al. discloses said body of said surveying instrument comprises a manual focus system with which said focusing lens group can be manually moved to adjust a focal point of said sighting telescope.

Referring to claim 24, Nakamura et al. discloses said body of said surveying instrument comprises a motorized manual focus system with which said focusing lens group can be manually moved by operating at least one hand-operated member to adjust a focal point of said sighting telescope.

Referring to claim 25, Nakamura et al. discloses said body of said surveying instrument comprises said sighting telescope (Col. 7, lines 55-58).

Referring to claim 26, Nakamura et al. discloses said surveying instrument is a total station (Col. 14, lines 26-30).

Referring to claim 27, Nakamura et al. discloses said driving force transmitting device comprises: a first gear provided in said AF drive unit, said first gear partly projecting out of said AF drive unit; and a second gear provided in said body of said sighting telescope; wherein said first gear and said second gear mesh with each other in a state where said AF drive unit is mounted to said body of said surveying instrument (Col. 7, lines 5-12).

Referring to claim 28, Nakamura et al. discloses said second gear partly projects out of said body of said surveying instrument.

Referring to claim 29, Nakamura et al. shows in Fig. 28 that said body of said surveying instrument comprises said sighting telescope; wherein said sighting telescope comprises an erecting optical system (187) positioned behind said focusing lens group (12); and wherein said light guide comprises a beam splitting optical member attached to a surface of said beam splitting optical member (Col. 14, line 60).

Referring to claim 30, Nakamura et al. discloses said erecting optical system comprises a Porro-prism (187) (Col. 14, lines 65-67).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suzuki et al. (Patent No. US 5,936,736) discloses a focusing apparatus and a surveying instrument.

Shirai (Patent No. US 6,072,642) discloses a focusing lens position detection apparatus.

Suzuki (Patent No. US 6,269,580) discloses a motor-driven focusing apparatus of a sighting telescope.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung C. Sohn whose telephone number is (703) 308-4093. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SCS

SCS
March 22, 2003



KEVIN PYO
PRIMARY EXAMINER